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of the stock is now immensely depreciated. If such should prove to be the case, the query now arises, from whence was this rich ore obtained? Rumors have reported the finding of the boxes and barrels in which the ore was supposed to have been transported, in close proximity to the so-called veins; and also of the vessels in which the metallic tin was melted and judiciously distributed, though the latter can hardly be accredited. But let us remember that such an undertaking by no means argues a dishonest purpose in the minds of many or even most of those engaged therein. This consolidated Tin Land Pool numbers among its members many sincere and honorable men, who are now extensively purchasing the stock at its greatly depreciated value. But let us also bear in mind that the problem of deceiving even skilled metallurgists is by no means a difficult one. How much more easily, then, may those be misled who are unschooled by experience in mining matters?

The chemist, in collecting his specimens from the mine which he is called upon to examine, gathers them in small canvas bags. These, speedily becoming too heavy for convenient transportation, are deposited at convenient points, to be collected at the close of the exploration. How easy to replace them by similar bags containing a far richer ore! It was by this very process that an Eastern capitalist was recently very nearly swindled out of \$206,000 by the analysis of his own chemist.

In conclusion, then, until the "Lake Superior Tin Land Pool" shall have given us abundant pledges of its good faith in the form of ingots of fine tin thrown upon the market, we cannot do otherwise than number it as one of the great fraudulent enterprises of the age.

K. S. A. C. CHEMICAL DEPARTMENT, October, 1874.

BRACHIOSPONGIA.

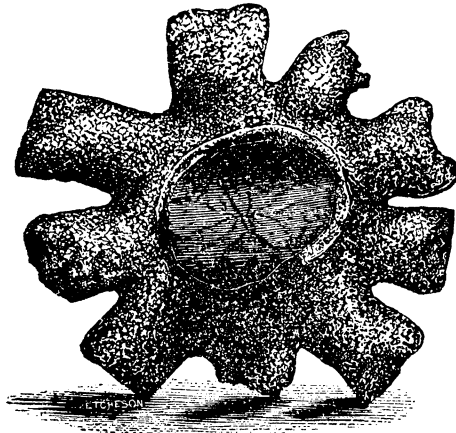
BY REV. HORACE C. HOVEY, M. A.

During a geological trip in 1855, I discovered a new genus of fossil sponge, which, although extra-limital, may be worthy of a brief notice. My first specimen was exhibited to Prof. L. P. Yardell, of Louisville, Kentucky, and while in his hands it was seen and described by Prof. D. D. Owen. (Second Report of Geology of Kentucky, p. 111.) He styled it an amorphozoon, and suggested the name of "*Scyphia digitata*," I doubt if he ever saw the fossil in

place, though he correctly refers it to the Birdseye group of the Lower Silurian. It was again described and imperfectly figured by Prof. R. Owen. (Indiana Geological Survey, 1859-60, pp. 362, 363.) He changed the name to *Syphonia digitata*, and he recognized it as a sponge. The specimen thus described, having nine arms, I claim as my discovery, and it should be acknowledged as typical of the genus. Prof. S. S. Lyon afterward found one with eleven arms, of which casts have been widely distributed. In 1867 I placed my original specimen in the hands of that accomplished naturalist, Prof. O. C. Marsh, of Yale College, for a more careful examination. The result was the rejection of the former unsuitable names and the substitution of *Brachiospongia*, (the arm-bearing sponge), with the specific name of *Roemerana*, in honor of Prof. F. Roemer, the leading authority on paleozoic sponges. Over fifty additional specimens, complete or fragmentary, were obtained by me on a subsequent visit to Franklin county, Kentucky, and a map of the sponge region was prepared. Specimens have also been found in the same geological horizon in Tennessee. Allied forms were likewise found, but they were so highly silicified and distorted as to make an accurate description impracticable. Prof. Marsh's notice appeared in the *American Journal of Science and Arts*, vol. 44, p. 88; and it was afterward corrected and elaborated in the form of a paper read before the American Science Association in 1868.

Figure 1 represents *B. Roemerana*.

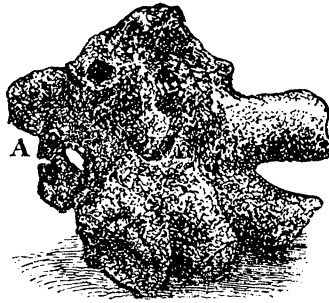
[Fig. 1.]



The general appearance of the *Brachiospongia* is vasiform; a central cup, oval, with a rim one or two inches high, being surrounded by tubular arms or fingers, hollow at the base, and closed at the extremity. These arms vary in number, from five to twelve; and on

this variation specific distinctions are founded. The smallest sponge of this kind thus far found is three inches in diameter, and the largest, twelve inches. Frequently the fingers were found detached from the body ; and in one case two large ones were found near each other, having so grotesque a resemblance to a pair of diminutive human feet that for a time my assistants positively refused to aid me further ! The exterior of the *Brachiospongia* is silicified, while through the interior characteristic silicious spicules are distributed. Near the center of the base, and opposite the mouth of the cup, is a small papilliform cone, which others have regarded as the point by which the sponge was attached to its support. But, in my opinion, this is a hasty conclusion ; and I think it can be shown that this basal protuberance is the remnant of a partially absorbed arm. In a specimen of *B. Hoveyii* (Marsh), having twelve arms, only six of which appear in the figure (see fig. 2), there is evidence that the sponge arms, though constant in their specific numbers, were at intervals liable to alternate absorption and reproduction. The arm, marked A, seems to be the youngest in a series of which the basal cone, marked B, is the retiring member. A more careful study of these curious and highly interesting fossils may serve to throw light upon the mysterious laws of spongoidal growth.

[Fig. 2.]



PLIOCENE TERTIARY OF WESTERN KANSAS.

BY B. F. MUDGE.

The Tertiary deposits of Western Kansas have been but little examined, and consequently our knowledge of the peculiar character of its geology is quite limited. The exceedingly rich and varied fossils of the Cretaceous (Niobrara group) immediately under it, have probably led to its neglect. Even its extent has hardly been noticed. Professors Cope and Marsh have both in their visits to the